

INDEX.

A	C
Allegany mountain, lowest depression,	15
Accidents and hazards to English steam boilers and vessels,	26, 52
Atlantic and western Ga. railroad,	44
Adams' railway springs,	46
Abroath and Forfar railway,	61
Analysis of sandstone,	88
Annapolis and Elk Ridge railroad report,	119, 137, 141
American locomotives in Eng.,	132
" " " "	301
Aycrigg, B. on lighthouses,	133, 181
Adhesion of locomotive wheels,	161
Advantages of peat as a fuel,	177
Advantages of the Reading railroad for transporting coal,	150, 186
Animal power, estimate of,	229
Alloying metals, process for,	236
Avery's rotary engine for saw-mills,	257
B	
Belgium, history of railroads in,	6
" Traffic and revenue of railroads in,	8
" Cost of working railroads in,	9
" Expense per passenger per mile in,	10
" Income per mile of railroad,	13
" Fares on railroads in,	39
British Queen, log book of,	17
Boat, steam explosion, case of,	19
Blasting by Galvanism, experiments in,	45, 266
By-laws of railway companies,	74
Blanc, Amidee death of,	132
Barfleur light house,	133
Building materials,	199
Beet sugar, specification for manufacturing, by J. Hurd,	234
Bridge, Westminster,	270
" Failure of the Hythe,	276
Baltimore and Ohio railroad,	271
Brick making, mechanical,	384
Bridge, suspension,	384
Canals, vs. railroads,	3
" in Ohio,	90
" Enlargement of the Erie unnecessary,	225
" Tonnage of the Erie,	233
" Locomotives applied to,	239
" Railroads to supersede, for transportation of freight,	294
Comparison of the Belgian, with United States railroads,	5, 12
Cost of working Belgian railroads,	9
" Repairs of " "	9
" " Locomotives and cars,	9
Cause of steamboat explosions,	19
Comparative hazard of steam in navigation,	24
Cast iron railroad wheels	30, 32
Cushman, Mc C., on locomotives,	34
Central and other Georgia railroads,	42, 81, 185, 190
Central railroad and Banking Co.,	81
Columbia railroad, statistics of,	49
Casey, W. R., letter of, to S. P. Lyman,	65
" " on adhesion,	161
Columbia railroad, by Wilson,	166
" " Cost of,	173
" " Details of motive power,	175
Cotton, porosity of,	90
Coal, advantages of the Reading railroad for the transportation of,	150, 186, 189, 209
Coal, cost of transportation, from the mines to New York by the Reading railroad,	103
Cost of right of way for railroads, by W. R. Casey,	193
Crams steam pile driver,	201
Coke, Peat,	323
Canals, locomotive power applied to	339—368
Columns of Rods, to make,	321
Compass, on cleaning the glass of	321
Causeway, Roman,	351

Civil Engineers, in the United States, Institution of, 206
 Civil Engineers, in Great Britain, Institution of, extract from their proceedings, 227
 Charleston, Louisville and Cincinnati railroad, 208, 259
 Converting refined metal into malleable iron, description of the process, 228
 Copperplates, method of producing by voltaic action, 230
 Cyclops, steam frigate, 276

D

Dividend, railroad, 4
 De Gerstner, Chev., communication from, 5
 Depression in the Alleghanies, the lowest, 15
 Diseases, new railway, 31
 Disasters on board English steam boats, 26, 52
 Dry rot, 64
 Dredging machine, use of the original steam, 105
 Daguerotype, 204
 Details of motive power and expense of, on the Columbia railroad, 175
 Danube and Abroath railroad, 272
 DePambour on the steam engine, 277, [307, 309, 341, 379]
 Draining land by steam, 349

E

Expense per passenger, per mile on Belgian railroads, 10
 Explosions, theory of steam boat, 22
 " And fires on board English steam vessels, 26, 27, 28, 29, 52
 " Prevention of, 59
 " Of steam boilers, 92
 English steam vessels, supposed safety of, 26
 English steam vessels, accidents and hazards to, 26
 Essay on the laws of trade, by C. Ellet, Jr., 33
 Experiments in blasting, by galvanism, 45, 266
 Errata, 64
 Eastern railroad in Mass., 77-78
 " In N. H., 114
 Engine, theory of the Steam, by De Pambour, 245, 277, 309, 341, 379
 Electro magnetic currents, 230

Electro magnetism as a motive power, 97, 129
 Electro magnetism as a motive power in navigation, 223, 230
 Elk Ridge and Annapolis railroad report, 119, 137, 141
 Eastwick and Harrison's locomotive, 147
 Expense of motive power on the Columbia railroad, 175
 Expense of transportation of coal from the mines to New York, by the Reading railroad, 189
 Engineers, in the United States, Institution of Civil, 206
 Erie canal, enlargement of, 225
 " Tonnage of, 233
 " Future revenue of, 289
 Engine, Avery's rotary, 257

F

Fare on railroads, 4, 14, 39, 160
 Fuel, advantages of peat as a, 177
 " Economy of, 301
 Flow of water through pipes of different lengths, 206
 Fessenden, J. M., report of, on Eastern railroad, 216
 Fluids, mode of filtering, 264
 Failure of Hythe bridge, Colchester, 277
 Future revenue of the Erie canal, 289

G

Galvanism, experiments in blasting by, 45, 266
 Grading, cost of, on the Columbia railroad, 173
 Gradients, table of, by C. Bourne, 207
 Galvanic telegraph on the Great Western railroad, 239
 Gasses for the Drummond light, 230
 Great Western steam ship, 269

H

History of railroads in Belgium, 6
 Home, wreck of the steam ship, 21
 Hazard, of steam ship navigation, comparative, 24
 History of the construction of the Westminster bridge, 94
 Harlem railroad, 159, 192, 221, 308
 Horticulture, 191
 Hythe bridge, 276

I

Income per mile of the Belgian railroad, 13
 Iron Trade in Scotland, 335—369

INDEX.

Invention, important,	348	Lardner's instruments for experimenting on railroads,	63
Internal Improvements and the Profession, remarks on,	353	Little Miami railroad report,	112
Iron, method of preserving,	384	Light houses at Barfleur, by Lt. Col. Aycrigg,	133, 181
Iron wheels, specification for casting,	30, 32	List of persons employed in the motive power department of Columbia railroad,	176
" Trade,	64	Light at Ostend,	185
" And steel to increase the strength of,	128	" For light houses, a new,	276
Instruments for railroad experimenting, by Dr. Lardner,	69	Levelling staff, an improved,	206
" For detecting verticle, deflections,	69	Launch of the steamer Sesostris,	261
" Lateral and horizontal do.,	69	Liverpool and Manchester do.	350
" Testing the laying of rails,	70	Locomotive engines, Woods on certain forms of,	327, 373
" Measuring the vibration of carriages,	71	Land draining by steam,	349
Ice boat, description and drawing of, by S. Billard,	207	Locomotives, American,	364, 366
Institution of civil engineers, extract from their proceedings,	227	M	
Iron ship,	271, 306	Meteorological record,	2, 160, 192, [288, 320]
Incrustation of stern boilers, to prevent,	305	Miseries, new railway,	31
J		Morals of railroads,	74
Johnson's patent to increase the strength of iron and steel,	128	Massachusetts railroads,	75
K		Mail bags, to facilitate the conveyance of, on railroads,	90
Kite's safety beam,	256	Munroe railroad, extension of the,	112
" With engravings,	298	Motive power, expense of, on the Columbia railroad,	75
Kilsby Tunnel,]	332	Memoir on light houses by Lt. Col. Aycrigg,	181
L		Mean temperature of the years 1833 to '38 inclusive at Avoye ferry La.,	224
Locomotives, engines and cars, cost of repairs,	9	Machinery, and process of converting metal into refined iron,	228
" On the true expression of the power and velocity of,	34	Metals, process for alloying, by cementation,	236
" Performance of,	49	Motto for locomotives,	275
" Eastwick and Harrison,	147	Manchester and Birmingham railway,	350
" Comparison between the power at different velocities,	227	N	
" Applied to canals,	239	Navigation, Comparative hazard of steam in,	24
" On a new plan,	308	New York and Erie railroad, letter upon,	65
Log book of the British Queen,	17	Norwich railroad,	298
Laws of trade, essay on, by C. Ellet, Jr.,	33	Newcastle and Wilmington railroad,	254
Letter to the secretary of the navy on the explosion of steam boilers	52	New light for light houses,	276
Legislation, steam boat,	57	O	
Lagrange and Memphis railroad report,	62, 78	On the true expression of the power and velocity of locomotives,	34
Letter to S. P. Lyman Esq., by W. R. Casy, on the N. Y. and Erie railroad,	65	Ohio canals, tolls on the,	90
		Ostend light,	185

Original use of the steam dredging machine,	105	Railroads, Central, and others in Georgia,	4281, 185
Ohio railroad,	209	" Receipts,	72, 96, 198
Oswego and Syracuse railroad,	224	" Polices or by-laws,	74
Objections to the mode now in use for calculating the effects of steam engines,	249	" At St. Petersburg,	112
P		" Munroe, extension of,	112
Passengers per mile, expense of,	10	" Report, Little Miami,	112
Patent for cast iron railroad wheels,	30	" Anapolis and Elkton,	119, 137, [141]
Power and velocity of locomotives, on the true expression of, by W. McC. Cushman.	34	" Profits of,	136
Performance of locomotives on the Columbia railroad,	49	" Car, Tilghmans,	146
Prevention of explosion,	59	" Harlem,	159, 192
Porosity of cotton,	90	" Columbia and Philadelphia by W. H. Wilson,	166
Patent to facilitate the conveyance of the mails on railroads,	90	" Cincinnati and Charleston,	208 [359]
Proceedings of scientific societies,	92	" Ohio,	208
Profits of railroads,	136	" Oswego and Syracuse,	224
Peat, advantages of, as a fuel, compressed,	177	" Norwich and Worcester,	238 [256]
Persons employed in the motive dep. of Columbia railroad,	176	" Newcastle and Wilmington,	255
Progress of the central railway in Georgia,	190	Railway society in England,	265
Pile driving machine by steam, Cram's,	201	" Signals	269
Power, by Smeaton, estimate of animal,	229	Railroad, Baltimore and Ohio,	271
Powder under water, explosion of, by a voltaic batery, by Col. Pasley,	229	" In Europe,	271
Progress of railways in Europe,	271	" Eastern counties,	271
Proofs of the correctness of the proposed, and inaccuracy of the old theory of steam boilers,	277	" Dundee and Arbroath,	272
Profession, Remarks on the	353	" London and Croydon,	273
Pavement, Roman,	384	" Brandling junction,	273
Paper hangings, important invention in the manufacturing of	348	" Birmingham and Derby,	273
R		" Grand Junction,	273
Railroads vs. canals,	3	" Manchester and Leeds,	273
Railroad dividends,	4	" York and North Midland,	274
Railway fares,	4, 14, 39, 160	" Aylesbury,	274
Railroads in Belgium compared with those in the U. States, by Chev. de Gerstner,	5	" Versailles,	274
" History of,	6	" Venice and Milan,	274
" Cost of,	9	" Russian,	275
" Income of per mile,	13	" Havre,	287
Railroads, Syracuse and Utica,	18	" Chairs by J. M. Fes-senden,	300
" Miseries of,	31	" From the Danube to the Black sea,	306
" Forfarshire and Arbroath,	61	" To superscede canals, for the transportation of merchandise and produce,	294
		Rails, machine to cut off,	305
		Revenue of railroads in Belgium,	8
		Reaping and threshing machine,	16
		Raceing, steamboat,	23
		Redfield, Wm. C., letter of, on explosions,	19
		 Rocks, by galvanism, blasting of,	45
		Report of Lagrange and Memphis railroad	62, 78
		" Little Miami railroad,	112

Report, Anapolis and Elkton rail-	
road,	119, 137, 141
" Experiments made on press-	
ed peat and on coke made there-	
from,	177
" The eastern railroad in	
New Hampshire,	214
" Of J. M. Fessenden,	216
Resistability of stone,	88
Reading railroad, advantages of,	
for the transportation of coal,	150,
	[186, 189, 209]
Right of way for railroads,	193
Roads, on the construction of, on	
deep bogs,	208
Rotary engine, Avery's, account	
of performance,	257
Rotative disc engine,	319
Roman pavement,	384
S	
Statistics, railroad,	1, 49
Syracuse and Utica railroad	18
Steam ships,	17
" Boat explosions, cause of,	19
" Theory of,	22
" Raceing,	23
" Navigation, comparative	
hazard of,	24
" Vessels, supposed safety of	
English,	26
" Accidents and hazards to	26
" Explosions and fires on	
board,	26, 27, 28, 29
" Pile driving machine,	201
" Ship Great Western,	269
" Engine, theory of, by De	
Pambour,	245, 277
" Present mode of calculat-	
ing the power of,	245, 249, 252
" Boilers to prevent the in-	
crustation of,	305
Steamer Sesostris, launch of,	264
Steamers from the Clyde to N. Y.,	309
Shipwrecks in 1837,	25
Specification for casting iron rail-	
road wheels,	30
" For a durable surface to re-	
ceive drawings and engravings	
on,	241
" To render wood and cloth in-	
destructible,	243
" For a machine to unload	
coals from shipping,	244
" An improvement in filter-	
ing fluids,	264
Springs, Adams' patent railway,	46
Sand stone, analysis of,	88
Stone, resistability of,	88
Scientific societies,	92
St. Petersburgh railroad,	112
Strength of iron and steel to in-	
crease the,	128
Staff, improved levelling,	206
Sugar, process of making from	
beets,	234
Side motion on railroads pre-	
vented,	244
Society, railway,	265
Signals, "	269
Safety beam, Kite's patent,	298
Saving machine to cut off rail-	
way bars,	305
Suspension bridges,	307
Suspension Bridge,	384
" Wisconsin,	321
" Reports on, the publishing a	
uniform edition of,	340
" in Germany,	350
Scotland, on the Iron trade in,	335, 369
Steam Engine, general theory of,	382
" " of the effect of with a	
given expansion,	382
Speed on Railroads	383
" Relation between the rela-	
tive volumes, &c.	341
T	
Threshing and reaping machine,	16
Trafic and revenue of railroads	
in Belgium,	8
Theory of steamboat explosios,	22
Trade, essay on the laws of,	33
Territory of Wisconsin,	73
Tolls on the Ohio canals,	90
Thames tunnel, Walker's report	
on,	95, 100
Tilghman's railroad cars,	146
Transportation of coal to N. York	
by the Reading railroad, cost of,	150,
	[186, 189, 209]
Trinity church,	200
Table of gradients, by C. Bourns,	207
Tonnage of the Erie canal,	233
Tellegraph, galvanic,	239
Theory of the steam engine, by	
De Pambour,	313
" Laws which regulate the	
mechanical action of the steam	313
" Mode of calculation now in	
use for ascertaining the effects	
of a steam engin,	245

Theory, objections against present theory,	249	Utica and Syracuse railroad.	18
" View of proposed theory,	252	V	
" Comparison of the two, theories,	280	Voltaic battery, firing gunpowder under water by,	229
" Area of steam passages,	286	" Action, method of producing copper plates by,	230
" Proofs of the inaccuracy of present theory,	309	W	
" Difference between the present and proposed theory,	312	Water through pipes of different lengths,	206
Tunnel, gigantic,	351	Westminster bridge,	270
U		Woods on certain forms of Locomotives,	327, 373
United States compared with Belgian, railroads in the,	5, 12	Wheel, new railway,	351

